

Amendments to the Claims

1           1. (currently amended) A method of controlled applica-  
2   tion of fluid pressure to a load, comprising the steps of:

3           (a) providing at least two pressure converters each  
4   having an output side connectable through respective check valves  
5   with a source of a pressurizing fluid and with said load, a drive  
6   side pressurizable in opposite directions to draw said fluid into  
7   and discharge said fluid from a respective output side, and a  
8   connection between each pressure side and the respective output  
9   side whereby each pressure converter has a member displaceable by  
10   pressurization of the respective drive side;

11           (b) measuring the displacement of each of said members;  
12   and

13           (c) controlling the pressurization of each of said drive  
14   sides so as to reduce an output pressure of a respective output  
15   side of one of said pressure converters as the respective member  
16   approaches a limiting position in a pressure stroke of said one of  
17   said pressure converters, and ~~complementarily~~ simultaneously  
18   increasing an output pressure of a respective output side of  
19   another of said pressure converters and a displacement of the  
20   respective member of said other pressure converter by initiating a  
21   pressure stroke of said other pressure converters.

1           2. (original) The method defined in claim 1 wherein the  
2           pressurization of said drive sides is controlled through respective  
3           valves and a common controller for said valves receiving inputs  
4           from respective position sensors responding to the positions of  
5           said members, said method further comprising the step (d) of  
6           repeating steps (a) through (c) a plurality of times until a  
7           certain pressure is reached at said load.

1           3. (original) The method defined in claim 2 wherein  
2           said load is a length of pipe which closed at its ends and is  
3           pressurized by said pressure converters to test the pipe.

1           4. (original) The method defined in claim 3 wherein  
2           only two of said pressure converters are provided and are alter-  
3           nately operated to charge said pipe with said fluid.

5. (canceled)

6. (canceled)

7. (canceled)

1           8. (currently amended) The system defined in claim 7 9  
2 wherein said output sides are connected to said pipe through a  
3 valve enabling draining of said pipe following a test.

1           9. (currently amended) A system for controlled applica-  
2 tion of fluid pressure to a load in the form of a pipe closed at  
3 its ends to pressure test the pipe, said system, comprising:

4           at least two pressure converters each having an output  
5 side connectable through respective check valves with a source of a  
6 pressurizing fluid and with said load, a drive side pressurizable  
7 in opposite directions to draw said fluid into and discharge said  
8 fluid from a respective output side, and a connection between each  
9 pressure side and the respective output side whereby each pressure  
10 converter has a member displaceable by pressurization of the  
11 respective drive side;

12           a respective displacement measuring device cooperating  
13 with each of said members for measuring the displacement of each of  
14 said members;

15           a common control unit for controlling the pressurization  
16 of each of said drive sides so as to reduce an output pressure of a  
17 respective output side of one of said pressure converters as the  
18 respective member approaches a limiting position in a pressure  
19 stroke of said one of said pressure converters, and simultaneously  
20 increasing an output pressure of a respective output side of  
21 another of said pressure converters and effecting a displacement of  
22 the respective member of said other pressure converter by initiat-

23 ing a pressure stroke of said other pressure converters, the  
24 pressurization of said drive sides being controlled through respec-  
25 tive valves and a common controller for said valves forming said  
26 control unit and receiving inputs from respective displacement  
27 measuring devices responding to the positions of said members, the  
28 pressure strokes being repeated until a certain pressure is reached  
29 at said load; and

30 proportional/integral regulator between said output sides  
31 and said pipe for delivering a signal to said common controller.

1 10. (currently amended) The system defined in claim 7 9  
2 wherein each of said pressure converters has at said drive side a  
3 respective double-acting cylinder and a piston, each of said output  
4 sides has a respective cylinder and piston and the respective  
5 member of each of said pressure converters connects the pistons to  
6 the cylinders thereof.

1 11. (currently amended) A system for controlled appli-  
2 cation of fluid pressure to a load in the form of a pipe closed at  
3 its ends to pressure test the pipe, said system, comprising:  
4 at least two pressure converters each having an output  
5 side connectable through respective check valves with a source of a  
6 pressurizing fluid and with said load, a drive side pressurizable  
7 in opposite directions to draw said fluid into and discharge said  
8 fluid from a respective output side, and a connection between each  
9 pressure side and the respective output side whereby each pressure

10 converter has a member displaceable by pressurization of the  
11 respective drive side;

12 a respective displacement measuring device cooperating  
13 with each of said members for measuring the displacement of each of  
14 said members;

15 a common control unit for controlling the pressurization  
16 of each of said drive sides so as to reduce an output pressure of a  
17 respective output side of one of said pressure converters as the  
18 respective member approaches a limiting position in a pressure  
19 stroke of said one of said pressure converters, and simultaneously  
20 increasing an output pressure of a respective output side of  
21 another of said pressure converters and effecting a displacement of  
22 the respective member of said other pressure converter by initiat-  
23 ing a pressure stroke of said other pressure converters, the  
24 pressurization of said drive sides being controlled through respec-  
25 tive valves and a common controller for said valves forming said  
26 control unit and receiving inputs from respective displacement  
27 measuring devices responding to the positions of said members, the  
28 pressure strokes being repeated until a certain pressure is reached  
29 at said load; and

30 each of said pressure converters has at said drive side a  
31 respective double-acting cylinder and a piston, each of said output  
32 sides has a respective cylinder and piston and the respective  
33 member of each of said pressure converters connects the pistons to  
34 the cylinders thereof, each of said members is being a rack and

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35 said displacement measuring devices ~~include~~ including pinions  
36 engageable with said racks.

1           12. (original) The system defined in claim 11 wherein  
2 each of said double-acting cylinders is connected to two ports of a  
3 four-port, three position valve having two further ports connected  
4 to a hydraulic pressure source and drain respectively, each of said  
5 four-port, three-position valves having an electrical actuator  
6 operated by said common controller.